
Zlatko Perišić¹, Marina Đikić¹, Marija Laban Lazović²,
Marko Marković³, Marija Milenković⁴

USING CELL PHONES WHILE DRIVING?

Abstract: The use of a cell phone while driving is becoming widespread more and more. In anonymous surveys, as many as 47.2% of drivers report using a cell phone while driving, and in some studies this number exceeds 50%. The results of published studies have shown a significantly increased rate of traffic accidents among drivers when using cell phones due to carelessness, unsafe speed, driving on the wrong side of the road, hitting a stationary object, overturning a vehicle and injuring pedestrians. These drivers had an increased chance of a lethal outcome. Men use mobile phones while driving much more often than women, causing more serious traffic accidents. Accident and death rates increase with age, except for drivers aged 20–24. The basic rule, which exists legislation and recommendations in almost all countries, should be to stop the vehicle due to the exchange of information and the use of a mobile phone. This rule, however, is being violated.

Sending SMS messages is considered to be the biggest risk. In an experiment conducted in 2013, it was found that people who dealt with a cell phone during a simulated drive missed twice as many simulated traffic signals, compared to a simulation without using a phone. The connection between traffic accidents and cell phone conversations with and without hands-free was also examined. Preliminary research shows that the incidence of accidents related to the use of cell phones use was influenced more by the number and length of calls than by the presence or absence of a hands-free tool: so, it seems that hands-free systems do not contribute to improving the safety of cell phone use while driving. Thus, their further improvement is likely to increase the risk of accidents.

Key words: mobile phone, driving, traffic accidents, hands-free, risk

¹ Zlatko Perišić, Emergency Center, Clinical Center of Serbia, Belgrade

² Clinic for Pulmonology, Clinical Center of Serbia, Belgrade

³ Clinic for Infectious and Tropical Diseases, Clinical Center of Serbia, Belgrade

⁴ Center for Anaesthesiology and Reanimatology, Clinical Center of Serbia, Belgrade

According to NHTSA (The National Highway Traffic Safety Administration), USA, any driver's distraction, such as texting, consuming food and drink, talking to passengers in the vehicle, listening to the radio, any use of a cellular phone carry a moderate to highest risk for safety in traffic. According to this fact, sending SMS messages is considered to be the highest risk. In general, these four most common actions greatly disturb the driver: sending and receiving calls and sending and receiving text messages while driving. There is no safe driving until it captures the full attention of the driver (NHTSA guidelines). According to the data of this organization for 2017, there were 377 deaths and 391 000 people were injured in motor vehicle accidents caused by driver disability. Following the same group of data, as many as 660 000 drivers use a cellular phone every day while driving, which creates great chances for injuries and deaths on US roads (NHTSA 2018). Collected data from various countries show that the percentage of drivers who use cellular phones while driving has been constantly increasing in the last 5–10 years, amounts to 3–11% depending on the country, the method of surveys and the degree of control. Research indicates that the use of cellular phones by drivers, in addition to taking their eyes off the road, hands off the steering wheel and diverting thoughts from driving, also causes more severe distractions, the so-called cognitive frenzy, visible e.g. in drug addicts, manifested by despair, hysteria, mania, signs of delirium, which, consequently, has an impact on driving patterns. Impact of content exchanged while driving on a cellular phone is obvious, affecting the poor assessment of the right side of the road, distance from other vehicles, objects and obstacles and overall narrowing of awareness of the situation and circumstances while driving. Some studies show that at least one of the four traffic accidents involved a driver whose attention was divided between driving and a cellular phone action. That means that the driver does not necessarily have to actively exchange content by a cellular phone, but that he is at least partially focused on ringing, buzzing and other signalling of the phone. The overall results of many years of research indicate that regular use of a cellular phone while driving creates cognitive impairment and even addiction, and progressively void the possibility of serious accidents, whether using a hand or not (hands-free) – (VHO – very high output – NHTSA 2011)¹.

Overall, the use of a cellular phone reduces the performance of the driver. According to published studies, young drivers are more likely to use cellular phones while driving and also lead to accidents with more serious consequences. (Bates, 2014). The use of cellular phones in the last 5–7 years has come out in one of the first three places when considering the actions of drivers that interfere with driving. In anonymous surveys, as many as 47,2% of drivers report that they use a cellular phone while driving, from time to time; in some studies this number exceeds 50%. As a precautionary measure, these drivers cite a reduction in speed and an increase in distance from the vehicle in front during communication². It was also found that drivers

who intentionally use various strategies to avoid official detecting unsafe driving use a cellular phone almost twice as often while driving. In some countries (USA, China), the use of a cellular phone by the person who caused the accident affects the amount of compensation paid to the injured person and the amount of compensation by the insurance company to the person who caused the accident.

Using data obtained from traffic accidents reported between 1992 and 1995 in the state of Oklahoma, USA, one study examined statistical data on accident rates between drivers with or without cellular phones. Amount of damage costs between accidents involving drivers who used a cellular phone immediately before and at the time of the accident and reported causes of the accident without the participation of cellular phones, type of collision, driver action immediately before the accident, accident location, number of deaths and fatal accidents were calculated, as the outcome, age and sex of the driver. The results showed a significantly increased accident rate among drivers who used cellular phones, due to carelessness, unsafe speed, driving on the wrong side of the road, hitting a fixed object, overturning a vehicle during or immediately before the accident, pedestrian injuries and fleeing from the site of accident. People with phones in use while driving had an increased risk of death in an accident compared to people without phones³. Male with phones had a significantly higher mortality and severe injury rate than female in the aforementioned accident mechanisms. The rate coefficients of some types of traffic accidents and deaths increased with increasing age, except for drivers under the age of 20–24 years old, who had the highest mortality rates. The study was conducted to discuss permitting or restricting the use of cellular phones while driving and possible prevention alternatives⁴.

There are also critics of restricting or banning the use of cellular phones while driving. They are invited to right to get key information or find out immediately, even while driving. However, on this occasion, it should be taken on mind that the key information has a greater potential for distraction, and, consequently, causing accidents with more serious consequences, so such information should be avoided while driving. The basic rule, which exists in almost all legislation and recommendations, should be to stop the vehicle due to the exchange of information and the use of a cellular phone. This rule, however, is being massively violated.

Having in mind the stated facts, about 40 countries, including Serbia, have restricted the use of cellular phones while driving⁵. As an argument against the restriction, critics cite the fact that many drivers play loud music while driving, which could prevent them from hearing the surrounding sounds. Although it has been proven, however, that loud music has a role in increasing the risk while driving, the fact remains that, unlike music, any realization of calling or receiving calls requires more attention and concentration than listening to music in the vehicle. Up to that, it should be noted that the music in the vehicles must not block the surrounding sounds, and that it should

be completely interrupted in conditions of any increased risk while driving (crowds, bad weather conditions, bad roads). On the other hand, you should definitely have a cellular phone in the vehicle for a quick response in case of need (e.g. making calls to the police, ambulance or roadside assistance).

Not only drivers, but also passengers at all should have a high awareness of the very limited need to use cellular phones while driving, as the disadvantages of its use while driving are much greater than the pros.

Standardization of regulations on the use of cellular phones while driving is an inevitable need to ensure safety in the transport sector. Drivers of commercial motor vehicles and professional drivers should be subject to legal restrictions on the use of cellular phones while driving in strictly defined situations. Non-compliance with the provisions of the law should lead to the sanctioning of a commercial driver for multiple offenses for violating traffic safety in the case of the use of cellular phones⁵.

Taking as a target group professional drivers who use cellular phones, imposing restrictions on their use while doing business in international trade, would further strengthen the regulations of individual countries, which requires international consensus (FMCSA – Federal Motor Carrier Safety Administration – 2016). Road safety would be improved by standardizing regulations regarding the use of cellular phones while driving. Collisions of drivers on highways, with fatalities and serious injuries would be significantly reduced. (Villie, 2007). This need is especially evident when you keep in mind that professional drivers very often drive massive, large vehicles⁶.

The question for decision makers in the judiciary, but not only; also for psychologists, educators, and even physicians - is whether juveniles who commit delicts in general, and those who are responsible for a car accident when using cellular phones (as motorists, pedestrians, cyclists, motorcyclecyclists) should face the same legal scope of sanctions that the law has imposed on adults⁷.

The general view is that it is necessary to find ways and means to assess the level of competence of juveniles in the whole process, including judicial. Thus, it is necessary to develop a standardized protocol that would help assess the level of competence of this population (MacArthur Foundation Study, 2003). A detailed consideration of the current and past state of mental state and development of the juvenile is vital for the evaluation of the violent event in which the juvenile participated, even in the accident with the use of a cellular phone. This research topic is also imposed in the considered sector due to the growing concern for the level of development of minors (Hile, 2019)^{5,7}.

Since mid-2003. by the end of 2019. the number of traffic accidents increases rapidly in the United States. Some data from published studies and insurance companies state that the share of some type of cellular phone use in these accidents is as

high as 34%! The same studies state that at least 85% of cellular phone owners use these occasionally while driving, which gives a number of over 500,000 drivers who use cellular phones while driving at any time of the day⁸.

Redelmeier and Tibshirani conducted a study on 699 drivers with cellular phones, who participated in the collisions and concluded that the risk of a collision if the driver uses a cellular phone while driving was between 3 and 6,5 times higher than when the phone was not in use. This level of risk in the mentioned study, is similar as the risk of driving with a blood alcohol level above the legal limit.

In an experiment conducted in 2013, Straier and Johnston found that people who dealt with a cellular phone during a simulated drive missed twice as many simulated traffic signals compared to a simulation without the use of cellular phones. The result of this experiment shows that the awareness that the situation was simulated (without real negative consequences) gives only slightly more than 6% worse result, compared to the actual situations. The findings of the 2013 study “confirmed that drivers talking on a cellular phone in a vehicle have a consistent pattern of slower response times”⁸.

For now, the risk factors for traffic accident, such as inappropriately high speed, alcoholism or driver’s acute health problem (heart attack, cerebral insult) have been much more investigated in literature than cellular phones using. This is especially refer to younger drivers. One study from the USA (two midwestern and two southern states) states that 13,6% of driver licenses belong to the age group of 18-24, but that they participate in 25,9% of fatal traffic accidents. As this population mostly uses cellular phones while driving, it can be concluded that this age group has a higher share in these accidents than the elderly. The connection between traffic accidents and cellular phone conversations with and without the use of hands (hands-free) was also examined. Preliminary research shows that the frequency and length of conversations has more impact on the traffic accidents than the presentation or absence of a hands-free tool⁹.

In brief

- Many drivers use a cellular phone while driving, which has been proven to reduce driving capabilities.
- Epidemiological studies have proven a link between cell phone use while driving and increased risk of traffic accidents, associated with a significant number of injured requiring hospitalization.
- Using the hands-free devices does not seem to contribute to reducing the risk.

- Laws that restrict or prohibit the use of cellular phones while driving are not easy to investigate. A possible kind of the cellular phone technology that could not be used while the vehicle is in motion currently exists only as an idea and there is no chance that it will be accepted in cellular phones industry.
- As it turned out that hands-free tool do not contribute to improving the safety of mobile phone use while driving, their further improvement is likely to increase the risk of accidents.

References

1. Traffic Safety Facts: 2012 Data. Washington, DC: NHTSA's National Center for Statistics and Analysis 2014 Contract No. DOT HS 812 016.
2. Caird JK, Willness CR, Steel P, Scialfa C. A meta-analysis of the effects of cell phones on driver performance. *Accid Anal Prev.* 2008; 40(4): 1282–93. doi: 10.1016/j.aap.2008.01.009.
3. The Impact of Hand-Held And Hands-Free Cell Phone Use on Driving Performance and Safety-Critical Event Risk (U.S. Department of Transportation, National Highway Traffic Safety Administration).
4. Wyllie, D. Law and Consequences Relating to Cell Phone Usage While Driving. Michigan, MI: ProQuest. 2007
5. www.ec.europa.eu/transport/road_safety/pdf/road_safety_citizen/road_safety_citizen_1009_24_en.pdf
6. Seo DC, Torabi MR. The Impact of In-Vehicle Cell-Phone Use on Accidents or Near-Accidents Among College Students. *Journal of American College Health.* 2004; 53(3): 101–7.
7. Kunar MA, Carter R, Cohen M, Horowitz TS. Telephone Conversation Impairs Sustained Visual Attention Via A Central Bottleneck. *Psychon Bull Rev.* 2008; 15(6): 1135–1140. doi: 10.3758/PBR.15.6.1135